PROJECT: 30% SALMON RIVER PHASE 3 DESIGN PLAN

SALMON RIVER PHASE 3 HABITAT ENHANCEMENT PLAN

STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NY	EPR0064	1	17

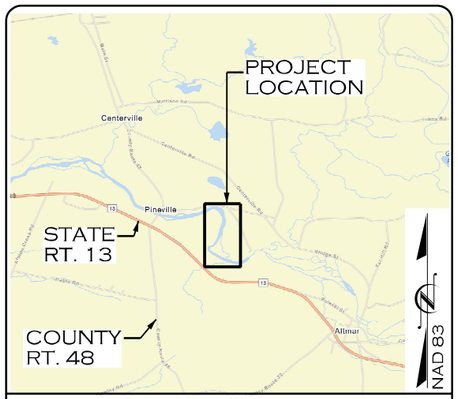
PROJECT LENGTH

PROPOSED DESIGN STREAM LENGTH = 5,164.80 LINEAR FEET

OSWEGO COUNTY

LOCATION: TOWN OF ALTMAR

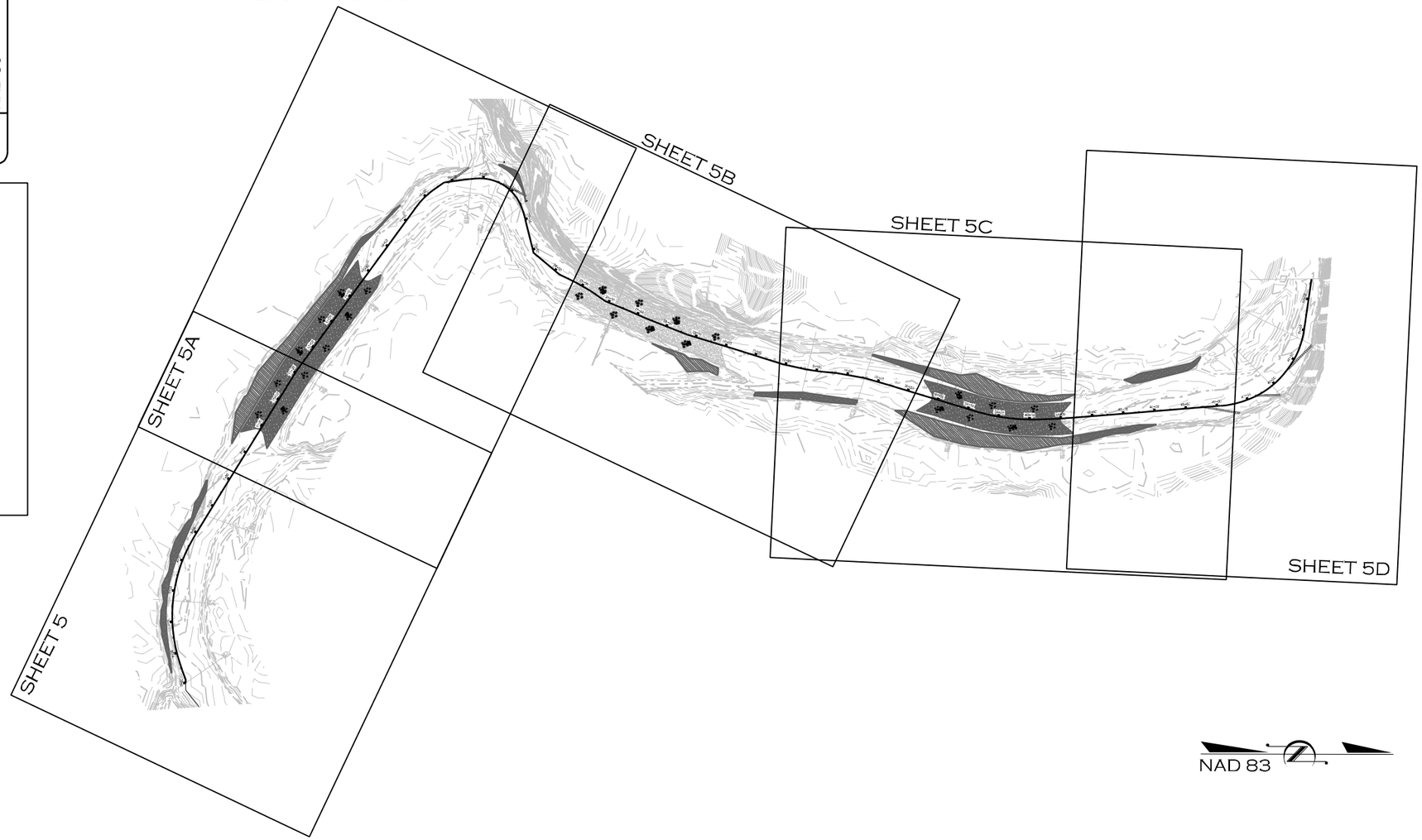
TYPE OF WORK: HABITAT ENHANCEMENT



VICINITY MAP

INDEX OF SHEETS

GEOGRAPHIC COORDINATE SYSTEM:
EPSG: 102716 - NAD 1983 STATE PLANE
NEW YORK CENTRAL FIPS 3102



GRAPHIC SCALES

80 40 0 50 100
PLANS

80 40 0 50 100
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

REVISIONS

NO.	DESCRIPTION	ENGR.	APPROV.	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

PREPARED FOR:

U.S. FISH & WILDLIFE SERVICE

U.S. Fish & Wildlife Service
New York Field Office
3817 Luker Road
Cortland, NY 13045

GIAN DODICI
PROJECT MANAGER

PREPARED BY:
ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511
NY LICENSE # = 099293

LETTING DATE:

KEVIN TWEEDY, PE
PROJECT ENGINEER

PROJECT ENGINEER

PROGRESS DRAWING
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DO NOT USE FOR CONSTRUCTION

SIGNATURE: P.E.

STREAM CONVENTIONAL SYMBOLS

- PROPOSED ROCK VANE
- PROPOSED BOULDER CLUSTER
- PROPOSED TOEWOOD PROTECTION & SOIL LIFT
- PROPOSED SOIL LIFT WITH STONE TOE
- EXISTING RIFFLE
- PROPOSED CONSTRUCTED RIFFLE
- EXISTING MINOR CONTOUR
- —500— PROPOSED MAJOR CONTOUR
- —502— PROPOSED MINOR CONTOUR
- LOD LIMITS OF DISTURBANCE
- PROPERTY LINE
- FEMA FLOODWAY
- R.O.W RIGHT-OF-WAY
- UPPER BANK
- LOWER INNER BERM
- SF SAFETY FENCE
- TP TREE PROTECTION
- SILT FENCE
- EXISTING FENCE
- CE CONSERVATION EASEMENT
- 20 EXISTING MAJOR CONTOUR
- CL ROAD CENTERLINE
- ACCESS ROAD
- 10+00 STREAM THALWEG
- STREAM TOP OF BANKS
- TEMPORARY STREAM CROSSING
- TRANSPLANTED VEGETATION
- TREE REMOVAL
- CHANNEL FILL
- EXISTING WETLANDS
- UPPER INNER BERM
- TOE OF CHANNEL

**NOTE: ALL ITEMS ABOVE MAY NOT BE USED ON THIS PROJECT

CONSTRUCTION SEQUENCE

TO BE PROVIDED AT 100% DESIGN

PROJECT # EPR0064 | SHEET NO. 1A

SYMBOLOGY / NOTES

GENERAL NOTES

1. THE CONTRACTOR WILL COMPLY WITH OSHA AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS GOVERNING WORKER HEALTH AND SAFETY. THE USFWS REPRESENTATIVE SHALL NOT BE RESPONSIBLE FOR ENSURING CONSTRUCTION CONTRACTOR COMPLIANCE OR IDENTIFICATION OF HAZARDS ON SITE. COSTS ASSOCIATED WITH THE CONTRACTOR'S HEALTH AND SAFETY COMPLIANCE, INCLUDING BUT NOT LIMITED TO THE REQUIREMENTS OF THIS NOTE, SHALL BE INCLUDED WITHIN THE CONTRACTOR'S BID.
2. THE CONTRACTOR IS REQUIRED TO CALL "DIG SAFE NY" AT LEAST 72 HOURS PRIOR TO WORK. ALL UTILITIES SHALL BE LOCATED PRIOR TO EXCAVATION.
3. SHOULD UTILITIES BE ENCOUNTERED DURING CONSTRUCTION WHICH INTERFERE WITH THE WORK AND FOR WHICH PROVISIONS ARE NOT PROVIDED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE USFWS REPRESENTATIVE OF THEIR EXISTENCE AND EXTENT OF CONFLICT WITH THE WORK.
4. LOCATION OF UTILITIES, PUBLIC AND/OR PRIVATE, INDICATED AS EXISTING AND/OR TO BE CONSTRUCTED AS SHOWN IN THE DRAWINGS, ARE APPROXIMATE ONLY. THEIR EXACT LOCATION SHALL BE DETERMINED IN THE FIELD. ADDITIONAL UTILITY LINES, WHETHER ABANDONED OR IN SERVICE, MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT THEIR OPERATIONS AND TAKE THE NECESSARY PRECAUTIONS TO PREVENT INTERFERENCE WITH OR DAMAGE TO THESE OR OTHER FACILITIES DURING THE COURSE OF CONSTRUCTION.
5. SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGING EXISTING UTILITIES. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE USFWS.
6. THESE DRAWINGS INCLUDE THE TECHNICAL REQUIREMENTS FOR THE PROJECT, AND GENERAL CONTRACT REQUIREMENTS TOGETHER WITH THE USFWS CONTRACT DOCUMENTS.
7. VERIFY ALL EXISTING FIELD CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.
8. CONSTRUCTION CONTRACTOR IS RESPONSIBLE FOR CONFIRMING DIMENSIONS, ELEVATIONS, QUANTITIES AND EXISTING CONDITIONS.
9. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE TO EXISTING FACILITIES CAUSED BY OPERATIONS WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. ALL DAMAGE TO EXISTING FACILITIES, WHICH IS NOT PART OF THE INTENDED WORK, SHALL BE REPAIRED BY THE CONTRACTOR WITHOUT COST TO THE STATE, AND TO THE SATISFACTION OF THE USFWS REPRESENTATIVE.
10. THE CONTRACTOR SHALL BE SUPPLIED WITH A COPY OF THE GENERAL PERMIT ISSUED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC). THE CONTRACTOR SHALL INSURE THAT ALL WORK IS PERFORMED IN COMPLIANCE WITH THE PERMIT. IF THE CONTRACTOR BECOMES AWARE OF ANY WORK REQUIREMENTS NOT IN COMPLIANCE WITH PERMIT CONDITIONS, THE CONTRACTOR SHALL INFORM NRCS SUPERVISOR IMMEDIATELY.

REVISIONS

NO.	DESCRIPTION	ENGR.	APPROV	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

PREPARED FOR:

U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER PHASE 3
HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

NY LICENSE # = 099293

PROJECT ENGINEER

PROGRESS DRAWING
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12/23/2024
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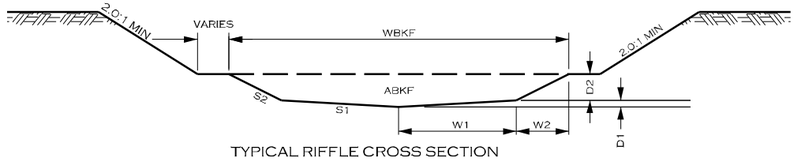
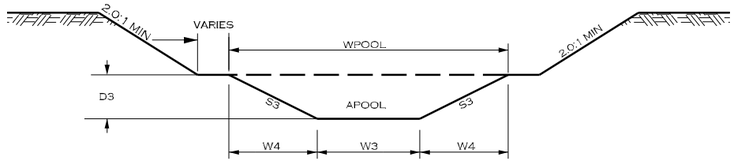
BRWHALEY

TYPICAL SECTIONS



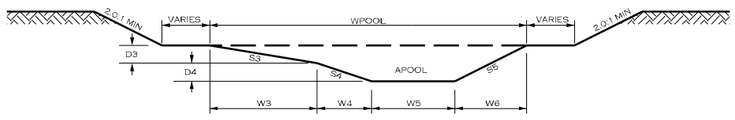
TYPICAL RIFFLE CROSS SECTION

TYPICAL RIFFLE CROSS SECTION DIMENSIONS									
Stream	Station	ABKF (SF)	WBKF (FT)	W1 (FT)	W2 (FT)	D1 (FT)	D2 (FT)	S1 (FT/FT)	S2 (FT/FT)
Salmon River	0+00 TO 51+65	707.1	124.6	50.8	11.5	1.12	5.75	45:1	2:1



TYPICAL "B CHANNEL" POOL CROSS SECTION

TYPICAL "B CHANNEL" POOL CROSS SECTION DIMENSIONS							
Stream	Station	APOOL (SF)	WPOOL (FT)	W3 (FT)	W4 (FT)	D3 (FT)	S3 FT/FT)
Salmon River	2+99 TO 36+91	1107.2	150.0	116.8	16.6	8.30	2:1



TYPICAL "C CHANNEL" POOL CROSS SECTION

TYPICAL "C CHANNEL" POOL CROSS SECTION DIMENSIONS											
Stream	Station	APOOL (SF)	WPOOL (FT)	W3 (FT)	W4 (FT)	W5 (FT)	W6 (FT)	D3 (FT)	D4 (FT)	S3 FT/FT)	S4 (FT/FT)	S5 (FT/FT)
Salmon River	0+00 TO 2+99 & 36+91 TO 51+65	1068.1	149.5	39.9	10.0	79.7	19.9	4.98	4.98	8:1	2:1	2:1

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NEW YORK FIELD OFFICE

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CORTLAND, NY 13045

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OSWEGO COUNTY, NY

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ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

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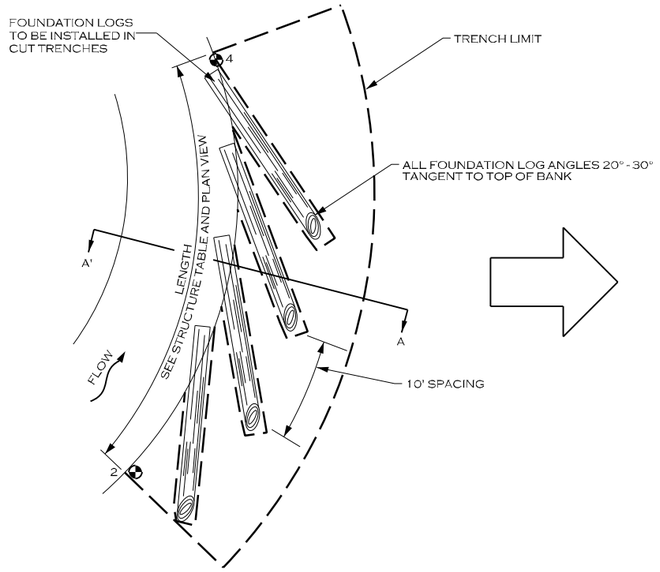
DREWHALL

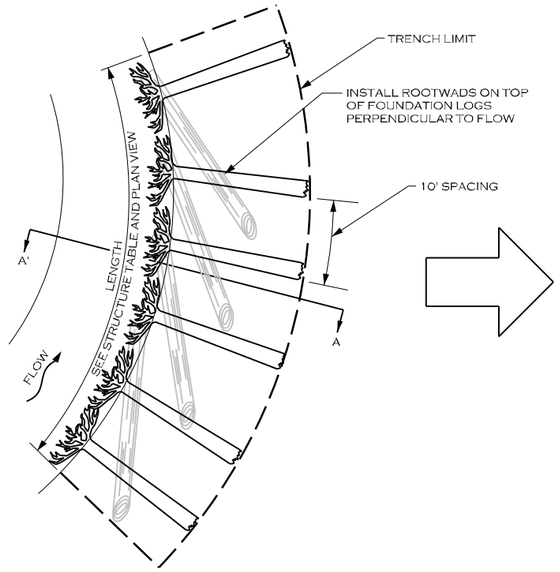
TOE WOOD PROTECTION STRUCTURE

PROJECT # EPR0064 | SHEET NO. 2

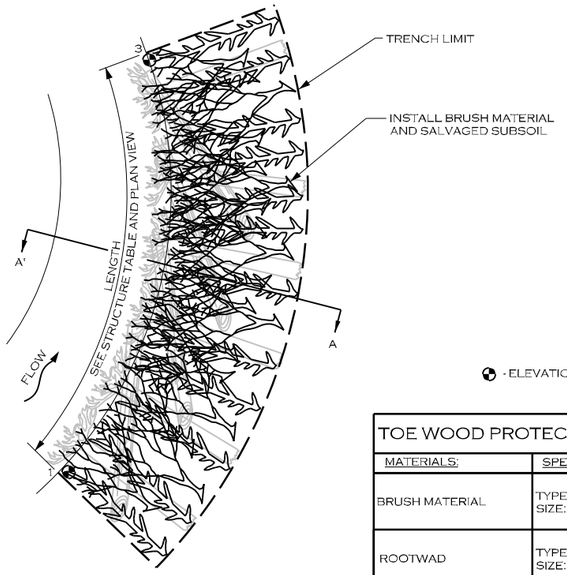
DETAILS



PLAN VIEW - 1
FOUNDATION LOG INSTALLATION



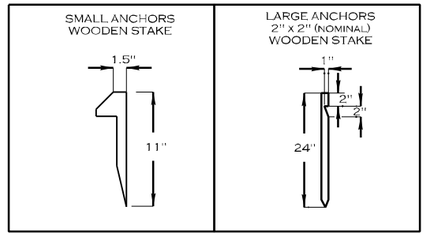
PLAN VIEW - 2
ROOTWAD INSTALLATION



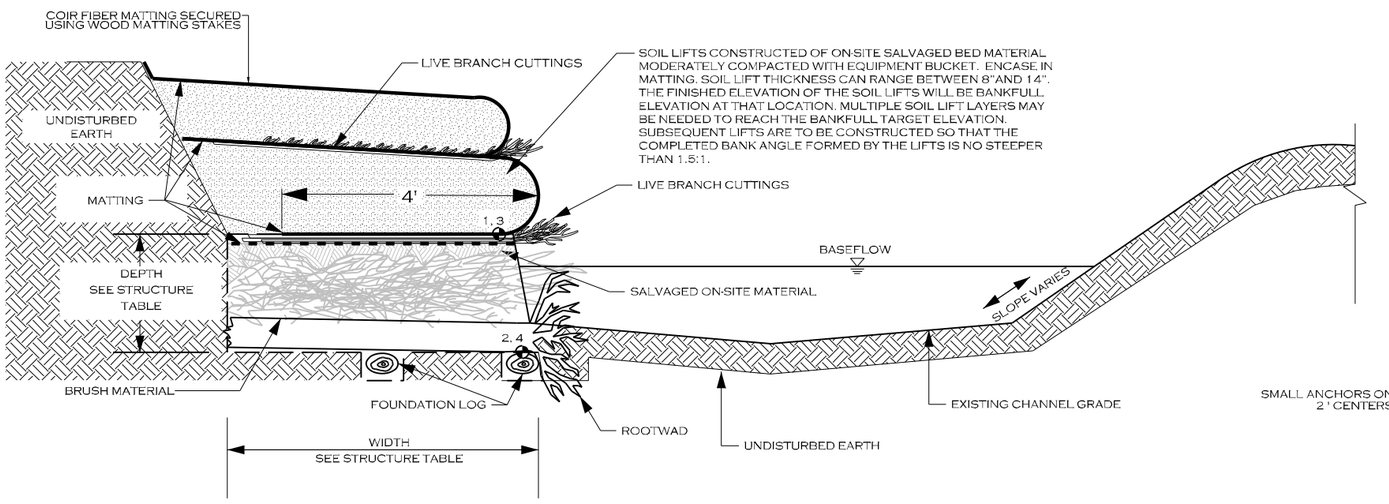
PLAN VIEW - 3
BRUSH LAYER INSTALLATION

● - ELEVATION POINT (SEE STRUCTURE TABLES)

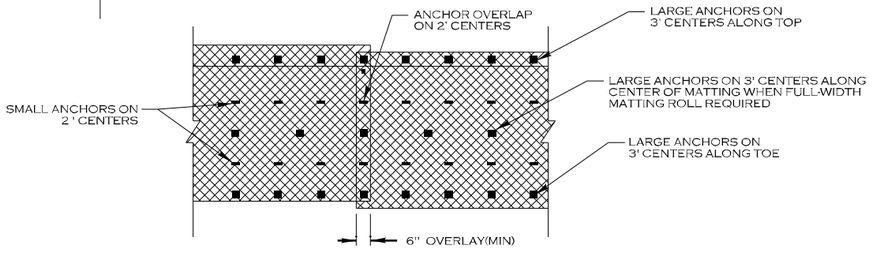
TOE WOOD PROTECTION STRUCTURE SPECIFICATIONS	
MATERIALS:	SPECIFICATIONS:
BRUSH MATERIAL	TYPE: LIMBS, BRANCHES AND SMALL LOGS SIZE: 5' - 10' LENGTH, MIN 1" DIAMETER
ROOTWAD	TYPE: HARDWOOD OR SOFTWOOD SIZE: LENGTH = 30"; 18" DIAMETER
FOUNDATION LOGS	TYPE: HARDWOOD OR SOFTWOOD SIZE: LENGTH = 30"; 18" DIAMETER
COIR FIBER MATTING	TYPE: SEE DETAIL
LIVE BRANCH CUTTINGS	TYPE: LIVE STAKE SPECIES IDENTIFIED IN PLANTING NOTES SIZE: 5' - 10' LENGTH, 0.5" - 2.5" DIAMETER



ANCHOR OPTIONS



SECTION VIEW A - A'



SOIL LIFT STAKE LAYOUT

REVISIONS				
NO.	DESCRIPTION	ENGR.	APPROV	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

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NEW YORK FIELD OFFICE

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910 GREENWOOD CIRCLE
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NY LICENSE # = 099293

PROJECT ENGINEER

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12/23/2024
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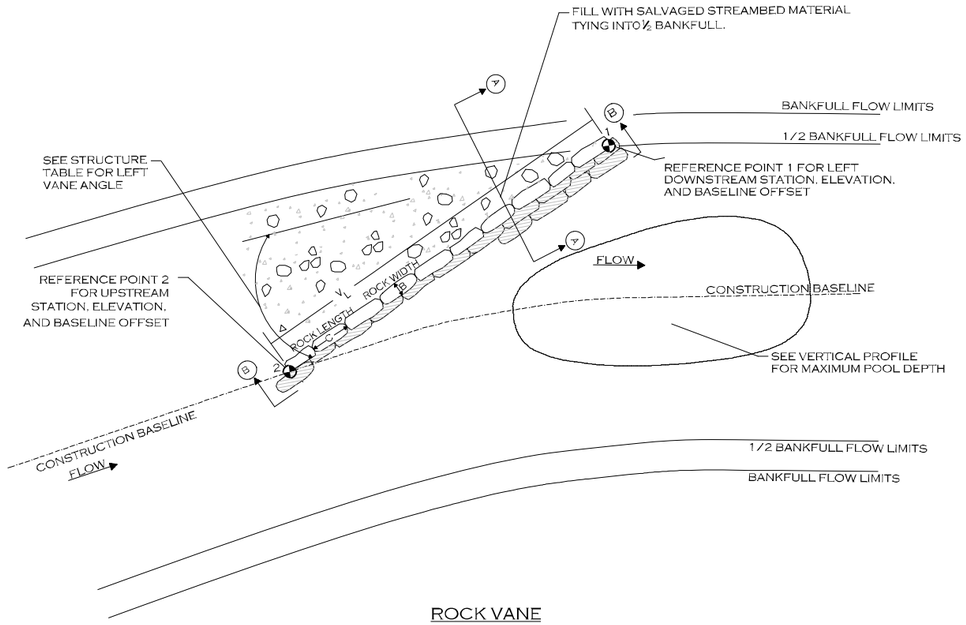
BENHAM

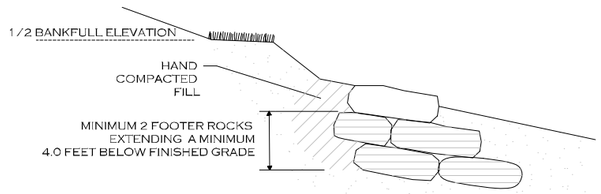
ROCK VANE

PROJECT # EPR0064 | SHEET NO. 2A

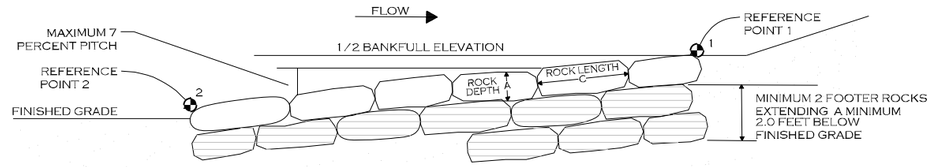
DETAILS



ROCK VANE
PLAN VIEW
NOT TO SCALE



ROCK VANE
SECTION A-A
NOT TO SCALE

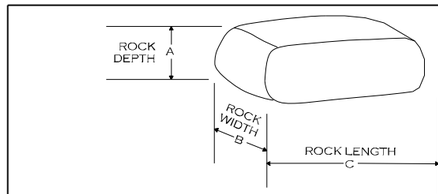


ROCK VANE ARM
SECTION B-B
NOT TO SCALE

- ELEVATION POINT (SEE STRUCTURE TABLES)

ROCK VANE NOTES:

1. ALL ROCKS (EXCEPT BOTTOM LAYER OF FOOTER ROCKS) SHALL BE SUPPORTED BY A FOOTER ROCK AND SHINGLED UPSTREAM OR INTO STREAM BANK. ALL ROCKS SHALL BE INTERLOCKED AND SHALL NOT ROCK OR ROTATE IN PLACE.
2. ALL ROCKS SHALL BE PLACED WITH THE PARALLEL FACES ORIENTED UP AND DOWN WITH THE TOP FACE TILTING UP FROM THE BED AT 5 TO 15 DEGREES TO THE DIRECTION OF FLOW ON THE CROSSOVER AND VANE ARMS.
3. ALL ROCKS (EXCEPT TOP LAYER OF CROSSOVER) SHALL BE PLACED TO FIRMLY ABUT ADJACENT ROCKS LEAVING NO GAPS BETWEEN ROCKS. GAPS SHALL BE LEFT BETWEEN THE TOP LAYER OF THE CROSSOVER ROCKS AS SHOWN IN PLANS.
4. STRUCTURE SHALL BE CONSTRUCTED SUCH THAT ROCKS FORM A CONTINUOUS, UNIFORM SLOPE WITH A MINIMUM OF STEEP, HIGH, OR LOW SPOTS ALONG THE TOP FINISHED SURFACE.
5. CHANNEL STATION AND ELEVATION REFERENCE MAY NOT ALWAYS FALL ON BASELINE OF CONSTRUCTION, THALWEG, OR CHANNEL INVERT.
6. STREAM BOTTOM AROUND STRUCTURE SHALL BE BACKFILLED WITH SALVAGED STREAMBED MATERIAL TO MEET FINISHED GRADE.
7. SEE STRUCTURE TABLE, PROFILE, AND GEOMETRY SHEET FOR ALL DIMENSIONS AND ELEVATIONS.



DETAIL FOR ROCK DIMENSIONS
(SEE ROCK SIZE TABLE)
NOT TO SCALE

ROCK DIMENSIONS		
A	B	C
3' (MIN.)	3' (MIN.)	5' (MIN.)

REVISIONS

NO.	DESCRIPTION	ENGR.	APPROV.	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

PREPARED FOR:

U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER PHASE 3
HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

NY LICENSE # = 099293

PROJECT ENGINEER

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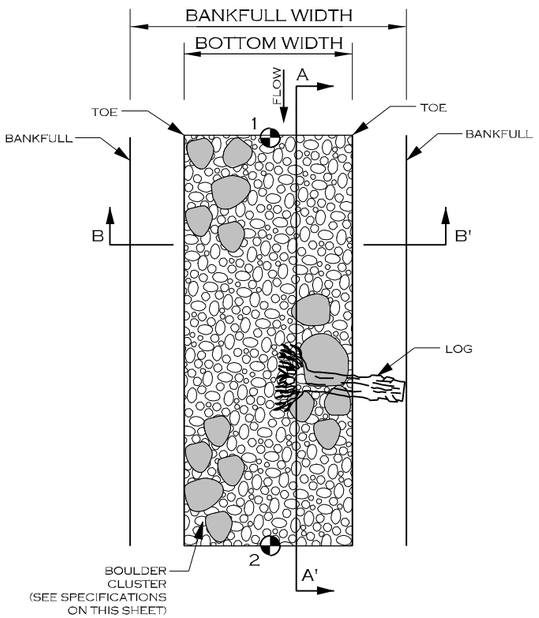
DEWHAT

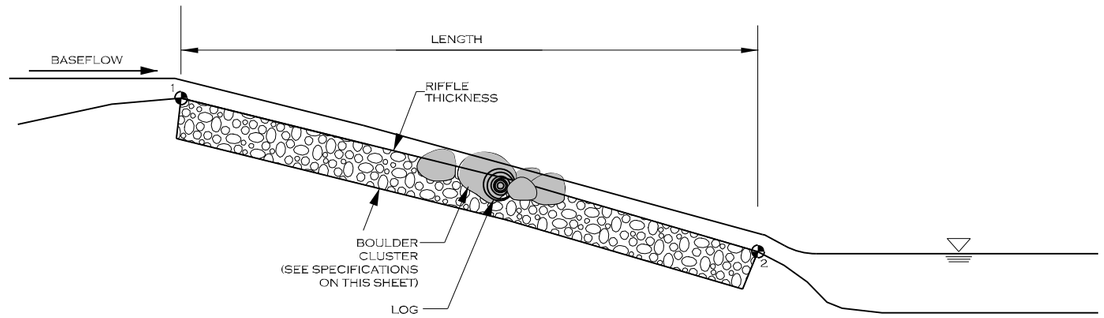
CONSTRUCTED RIFFLE WITH BOULDER CLUSTERS

PROJECT # EPR0064 | SHEET NO. 2B

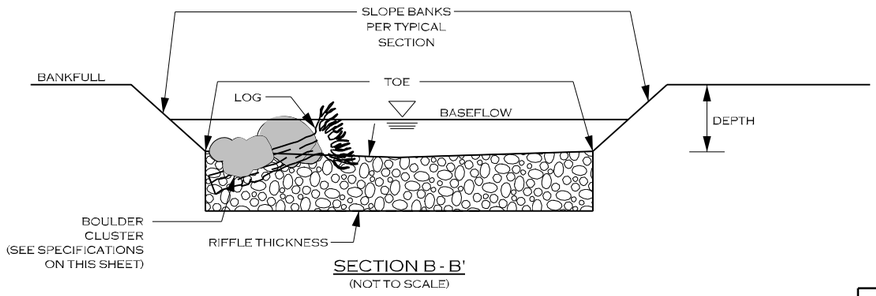
DETAILS



PLAN VIEW
(NOT TO SCALE)



PROFILE A - A'
(NOT TO SCALE)



SECTION B - B'
(NOT TO SCALE)

⊕ - ELEVATION POINT (SEE STRUCTURE TABLE)

CONSTRUCTED RIFFLE SPECIFICATIONS

MATERIALS:	SPECIFICATIONS:
CONSTRUCTED RIFFLE MIX	TYPE: SALVAGED ON-SITE COARSE COBBLE MATERIAL. THICKNESS: 24" - 30" MIN.

NOTES
1. GRADE STREAMBED AND BANKS TO PROPOSED DIMENSIONS.
2. EXCAVATE APPROXIMATELY 18" BELOW PROPOSED GRADING.
3. PLACE BOULDER CLUSTERS PER SPECIFICATIONS.
4. FILL STREAM BED WITH COMPACTED STONE TO FINAL DESIGN PROPOSED GRADES.

BOULDER CLUSTERS SPECIFICATIONS

MATERIALS:	SPECIFICATIONS:
BOULDER	TYPE: LIMESTONE SIZE: 2 FT X 3 FT X 3 FT
LOG	SIZE: LOG TO BE A 20FT IN LENGTH AND 12"-18" IN DIAMETER

NOTES
1. BOULDERS TO BE PLACED 1 CLUSTER PER 50-75 FT ON THE OUTER ONE THIRD OF THE CHANNEL AND NOT WITHIN THE THALWEG.
2. BOULDER PLACEMENT SHOULD BE PLACED BY ALTERNATING SIDES OF THE CHANNEL.
3. BOULDER CLUSTERS ARE TO COMPRISE OF 5 TO 8 BOULDERS PER CLUSTER.
4. 50% OF BOULDER CLUSTERS TO HAVE ONE LOG PLACED WITH STONE.
5. BOULDERS ARE TO BE PLACED 12" TO 18" INTO STREAMBED.
6. BOULDERS ARE NOT TO BE TOUCHING WHEN PLACED ALLOWING FOR GAPS.

REVISIONS

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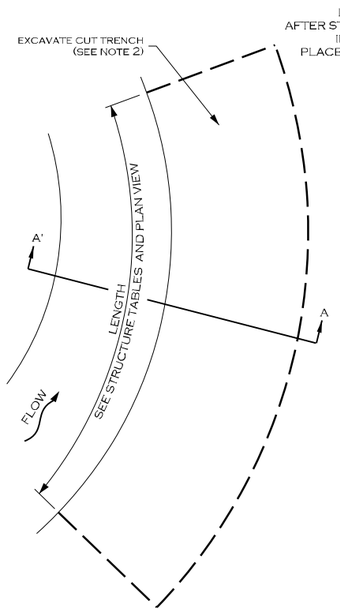
BRWHALT

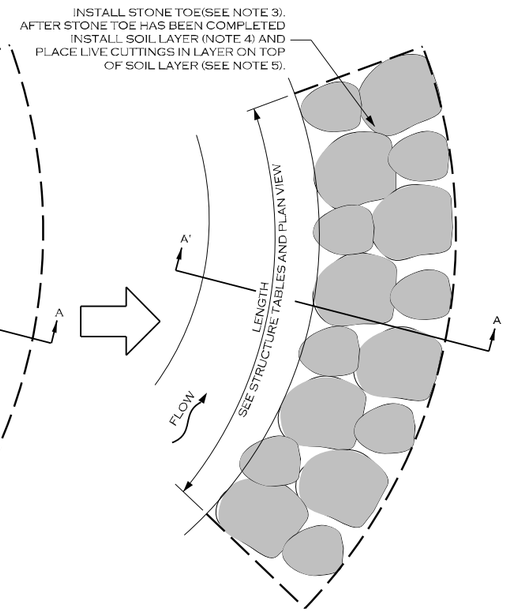
PROJECT # EPR0064 | SHEET NO. 2C

DETAILS

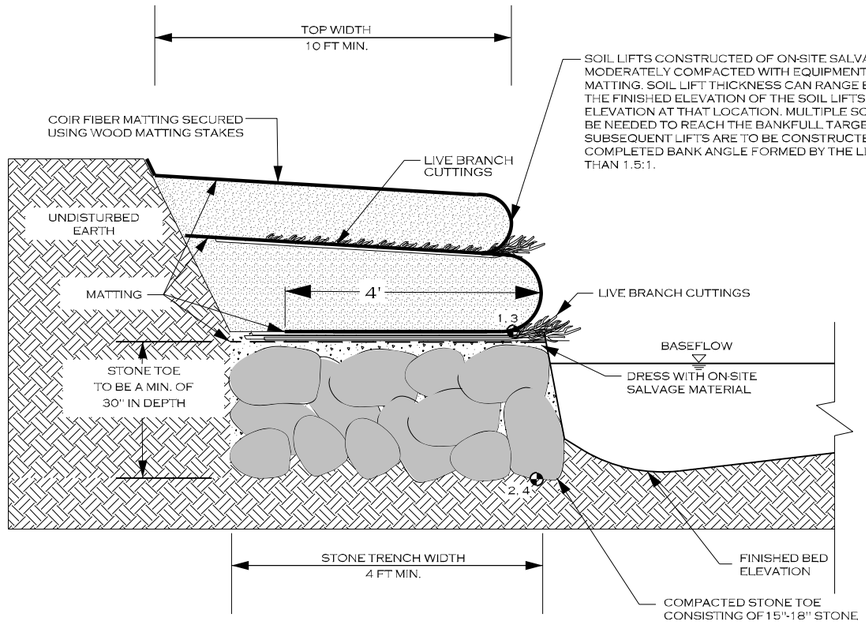
SOIL LIFT WITH STONE TOE



PLAN VIEW - 1
TRENCH EXCAVATION



PLAN VIEW - 2
BRUSH LAYER INSTALLATION



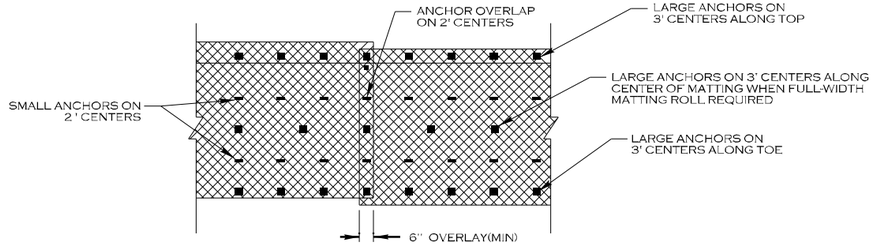
SECTION VIEW

GEOLIFT SPECIFICATIONS

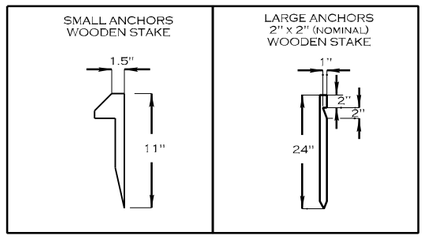
MATERIALS:	SPECIFICATIONS:
STONE TOE MATERIAL	TYPE: LIMESTONE SIZE: 15"-18"
COIR FIBER MATTING	SEE DETAIL

NOTES:

1. STRUCTURE DIMENSIONS AND MEASUREMENTS ARE SHOWN ON THE STRUCTURE TABLE SHEET.
2. DIG A TRENCH ALONG BANK WHERE TOE WOOD IS TO BE INSTALLED, TO THE DEPTH AND WIDTH SPECIFIED IN THE DETAILS AND STRUCTURE TABLE. IF STONE TOE IS BEING PLACED IN A LOCATION WHERE THERE IS NOT EXISTING GROUND, PLACE FILL MATERIAL AND COMPACT TO FORM THE TRENCH FOR THE FOUNDATION MATERIALS.
3. INSTALL STONE TOE FOUNDATION TO THE DEPTH SPECIFIED IN THE STRUCTURE TABLE.
4. PLACE AN UNCONSOLIDATED LAYER OF SOIL AND COBBLE ON TOP OF STONE TOE. STONE TOE FOUNDATION/SOIL COBBLE LAYER SHOULD EXTEND APPROXIMATELY 0.5 FT ABOVE THE TYPICAL BASEFLOW ELEVATION.
5. INSTALL LIVE CUTTINGS AT LEAST 5 FEET IN LENGTH, AND AT LEAST 1 INCH IN DIAMETER.
6. CONSTRUCT GEOLIFTS TO REBUILD THE STREAMBANK ABOVE THE STONE TOE.



SOIL LIFT STAKE LAYOUT



ANCHOR OPTIONS

REVISIONS				
NO.	DESCRIPTION	ENGR.	APPROV.	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

PREPARED FOR:

U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER PHASE 3
HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

NY LICENSE # = 099293

PROJECT ENGINEER

PROGRESS DRAWING
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DO NOT USE FOR CONSTRUCTION

12/23/2024
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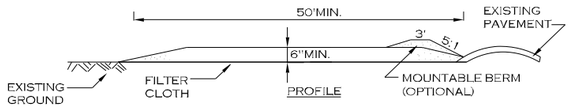
DREWHAT

PROJECT # EPR0064 | SHEET NO. 2D

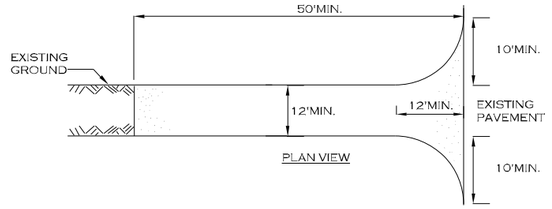
DETAILS

GRAVEL CONSTRUCTION ENTRANCE



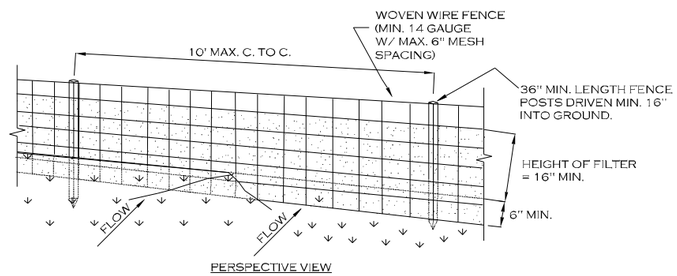
CONSTRUCTION SPECIFICATIONS

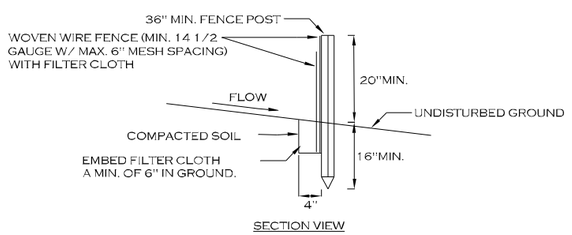
1. STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



NOTE:
ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

TEMPORARY SILT FENCE





CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

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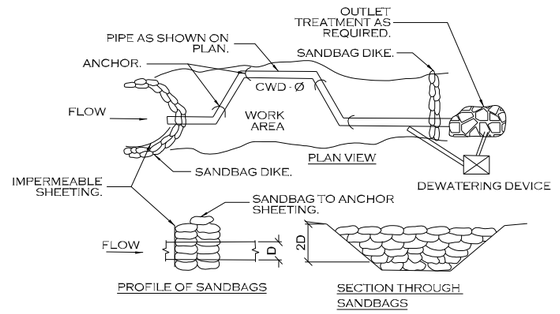
DEWALT

PROJECT # EPR0064 | SHEET NO. 2E

DETAILS

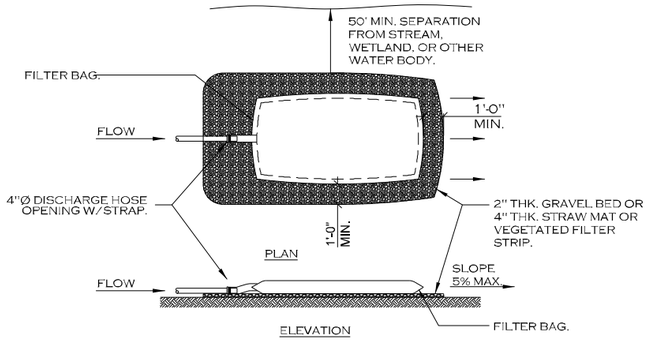
CLEAR WATER DIVERSION PIPE DETAIL



CONSTRUCTION SPECIFICATIONS

1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL. OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNCTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

TYPICAL GEOTEXTILE FILTRATION BAG DETAIL



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., GRAVEL, STRAW MAT OR VEGETATED FILTER STRIP) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12" FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATION. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. THE BAG IS CONSIDERED FULL WHEN REMAINING BAG FLOW AREA HAS BEEN REDUCED BY 75%. AT THIS POINT IT SHOULD BE REPLACED WITH A NEW BAG.
5. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
6. USE NONWOVEN GEOTEXTILE WITH A DOUBLE NEEDLE MACHINE USING HIGH STRENGTH THREAD. DOUBLE STITCHED "JOE" TYPE CAPABLE OF MINIMUM ROLL STRENGTH OF 100 LBS/INCH (ASTM D4884). SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4" DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

MIN. GRAB TENSILE	200 LBS.
MIN. GRAB TENSILE ELONGATION	50%
MIN. TRAPEZOID TEAR STRENGTH	80 LBS.
MULLEN BURST STRENGTH	380 PSI
MIN. PUNCTURE.	130 LBS.
APPARENT OPENING SIZE (AOS)	40-80 US SIEVE
MIN. UV RESISTANCE	70%
MIN. FLOW THRU RATE	70 GPM/FT²

7. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

REVISIONS

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NEW YORK FIELD OFFICE

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PROJECT ENGINEER

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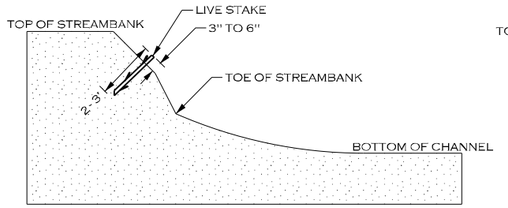
DREWHALL

PROJECT # EPR0064 | SHEET NO. 3

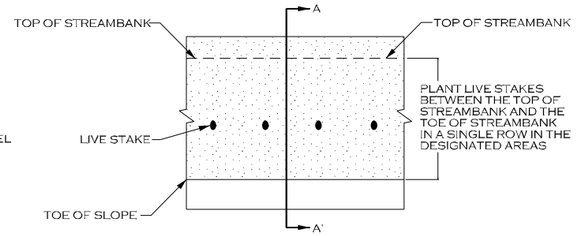
PLANTING DETAILS

LIVE STAKING

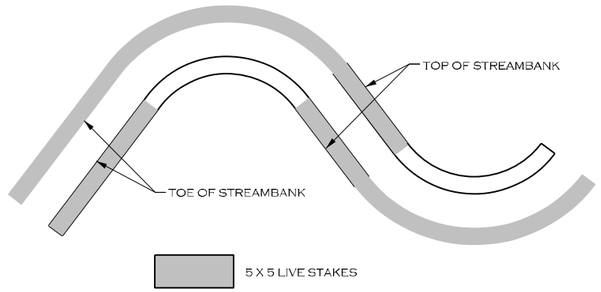


SECTION A - A'

NOTES:
1. IF STAKES ARE BEING HARVESTED NEAR THE SITE, STAKES SHOULD BE CUT AND INSTALLED ON THE SAME DAY.
2. KEEP STAKES COOL AND MOIST WHILE ON THE JOB SITE AND PRIOR TO INSTALLATION.
3. DO NOT INSTALL STAKES THAT HAVE BEEN SPLIT.
4. STAKES MUST BE INSTALLED WITH BUDS POINTING UPWARDS.
5. STAKES SHALL BE INSTALLED PERPENDICULAR TO BANK.
6. STAKES SHALL BE 1/2 TO 2 INCHES IN DIAMETER AND 2 TO 3 FT LONG.
7. STAKES SHALL BE INSTALLED LEAVING 1/5 OF STAKE ABOVE GROUND.

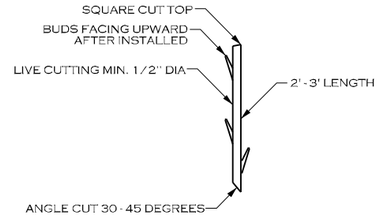


PLAN VIEW



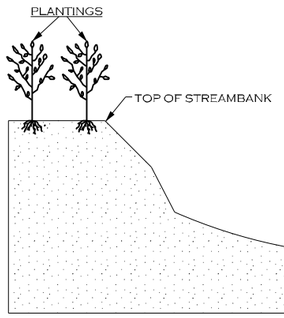
SEE PLAN VIEW SHEET FOR LIVE STAKING LOCATIONS

TYPICAL LIVE STAKING AREA PLAN VIEW



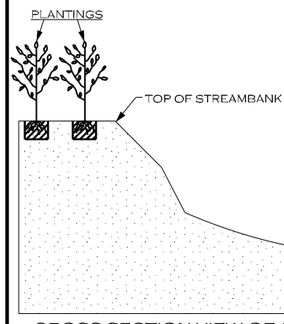
LIVE STAKE DETAIL

PLANTING SPECIFICATIONS



CROSS SECTION VIEW OF BARE ROOT PLANTING

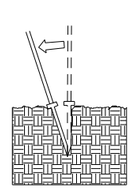
NOTES:
1. ALLOW FOR 6-10 FEET BETWEEN PLANTINGS, DEPENDING ON SIZE.
2. LOOSEN COMPACTED SOIL.
3. PLANT IN HOLES MADE BY A MATTOCK, DIBBLE, PLANTING BAR, OR OTHER APPROVED MEANS.
4. PLANT IN HOLES DEEP AND WIDE ENOUGH TO ALLOW THE ROOTS TO SPREAD OUT AND DOWN WITHOUT J-ROOTING.
5. KEEP ROOTS MOIST WHILE DISTRIBUTING OR WAITING TO PLANT BY MEANS OF WET CANVAS, BURLAP, OR STRAW.
6. HEEL-IN PLANTS IN MOIST SOIL OR SAWDUST IF NOT PROMPTLY PLANTED UPON ARRIVAL TO PROJECT SITE.



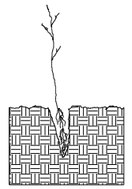
CROSS SECTION VIEW OF CONTAINER PLANTING

NOTES:
1. WHEN PREPARING THE HOLE FOR A POTTED PLANT OR SHRUB DIG THE HOLE 8-12 INCHES LARGER THAN THE DIAMETER OF THE POT AND THE SAME DEPTH AS THE POT.
2. REMOVE THE PLANT FROM THE POT. LAY THE PLANT ON ITS SIDE IF NECESSARY TO REMOVE THE POT.
3. IF THE PLANT IS ROOTBOUND (ROOTS GROWING IN A SPIRAL AROUND THE ROOT BALL), MAKE VERTICAL CUTS WITH A KNIFE OR SPADE JUST DEEP ENOUGH TO CUT THE NET OF ROOTS. ALSO MAKE A CRISS-CROSS CUT ACROSS THE BOTTOM OF THE BALL.
4. PLACE THE PLANT IN THE HOLE.
5. FILL HALF OF THE HOLE WITH SOIL (SAME SOIL REMOVED FOR BACKFILL).
6. WATER THE SOIL TO REMOVE AIR POCKETS AND FILL THE REST OF THE HOLE WITH THE REMAINING SOIL.

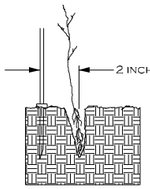
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



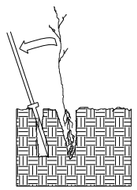
1. INSERT PLANTING BAR AS SHOWN AND PULL HANDLE TOWARD PLANTER.



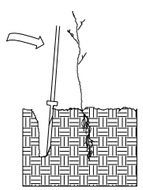
2. REMOVE PLANTING BAR AND PLACE SEEDING AT CORRECT DEPTH.



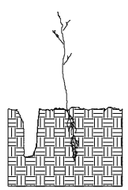
3. INSERT PLANTING BAR 2 INCHES TOWARD PLANTER FROM SEEDING.



4. PULL HANDLE OF BAR TOWARD PLANTER, FIRMING SOIL AT BOTTOM.



5. PUSH HANDLE FORWARD FIRMING SOIL AT TOP.



6. LEAVE COMPACTION HOLE OPEN. WATER THOROUGHLY.

PLANTING NOTES:

PLANTING BAG

DURING PLANTING, SEEDLINGS SHALL BE KEPT IN A MOIST CANVAS BAG OR SIMILAR CONTAINER TO PREVENT THE ROOT SYSTEMS FROM DRYING.

KBC PLANTING BAR

PLANTING BAR SHALL HAVE A BLADE WITH A TRIANGULAR CROSS SECTION, AND SHALL BE 12 INCHES LONG, 4 INCHES WIDE AND 1 INCH THICK AT CENTER.

ROOT PRUNING

ALL SEEDLINGS SHALL BE ROOT PRUNED, IF NECESSARY, SO THAT NO ROOTS EXTEND MORE THAN 10 INCHES BELOW THE ROOT COLLAR.

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DREWHALL

PROJECT # EPR0064 | SHEET NO. 3A

PLANTING NOTES

PLANTING NOTES

TO BE PROVIDED AT 100% DESIGN

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DEWHALT

PROJECT # EPR0064 | SHEET NO. 4

STRUCTURE TABLE

STRUCTURE TABLE

TO BE PROVIDED AT 100% DESIGN

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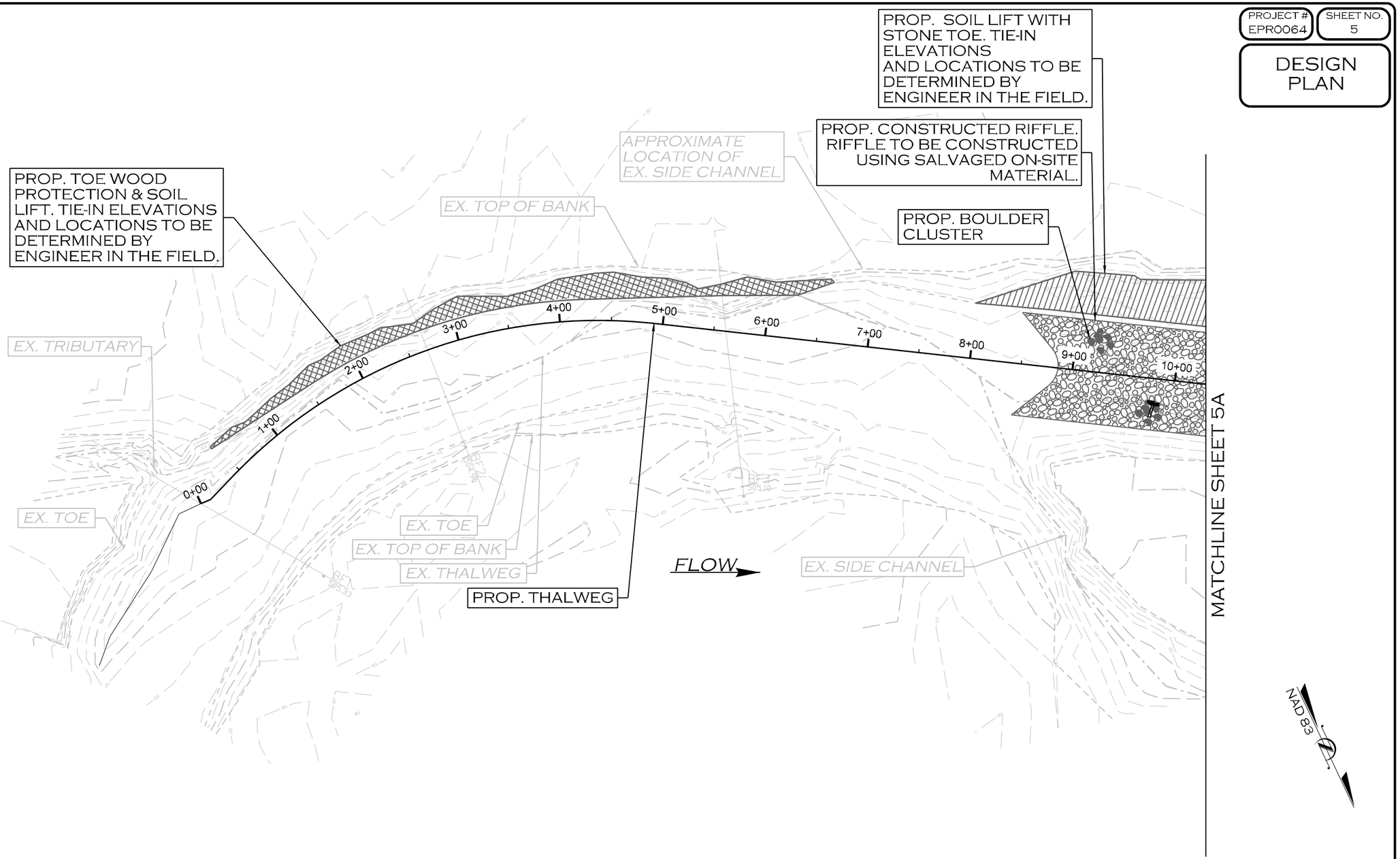
BRENHALT

PROJECT # EPR0064 | SHEET NO. 5

DESIGN PLAN



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DREWEAT

PROJECT # EPR0064 | SHEET NO. 5A

DESIGN PLAN

PROP. SOIL LIFT WITH STONE TOE. TIE-IN ELEVATIONS AND LOCATIONS TO BE DETERMINED BY ENGINEER IN THE FIELD.

PROP. BOULDER CLUSTER

PROP. TOE WOOD PROTECTION & SOIL LIFT. TIE-IN ELEVATIONS AND LOCATIONS TO BE DETERMINED BY ENGINEER IN THE FIELD.

FLOW

MATCHLINE SHEET 5

11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

BF4 504.19

BF5 503.93

EX. TOE

PROP. CONSTRUCTED RIFFLE. RIFFLE TO BE CONSTRUCTED USING SALVAGED ON-SITE MATERIAL.

PROP. THALWEG

EX. THALWEG

EX. TOP OF BANK

PROP. VANE ARM STRUCTURE

EX. TRIBUTARY

BF6 501.22

BF7 500.68

BF8 501.57

FLOW

PROP. VANE ARM STRUCTURE

PROP. TOE WOOD PROTECTION & SOIL LIFT. TIE-IN ELEVATIONS AND LOCATIONS TO BE DETERMINED BY ENGINEER IN THE FIELD.

NAD 83

MATCHLINE SHEET 5B

50 25 0 50 100

SCALE (FT)

REVISIONS				
NO.	DESCRIPTION	ENGR.	APPROV	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

PREPARED FOR:

U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER PHASE 3
HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

NY LICENSE # = 099293

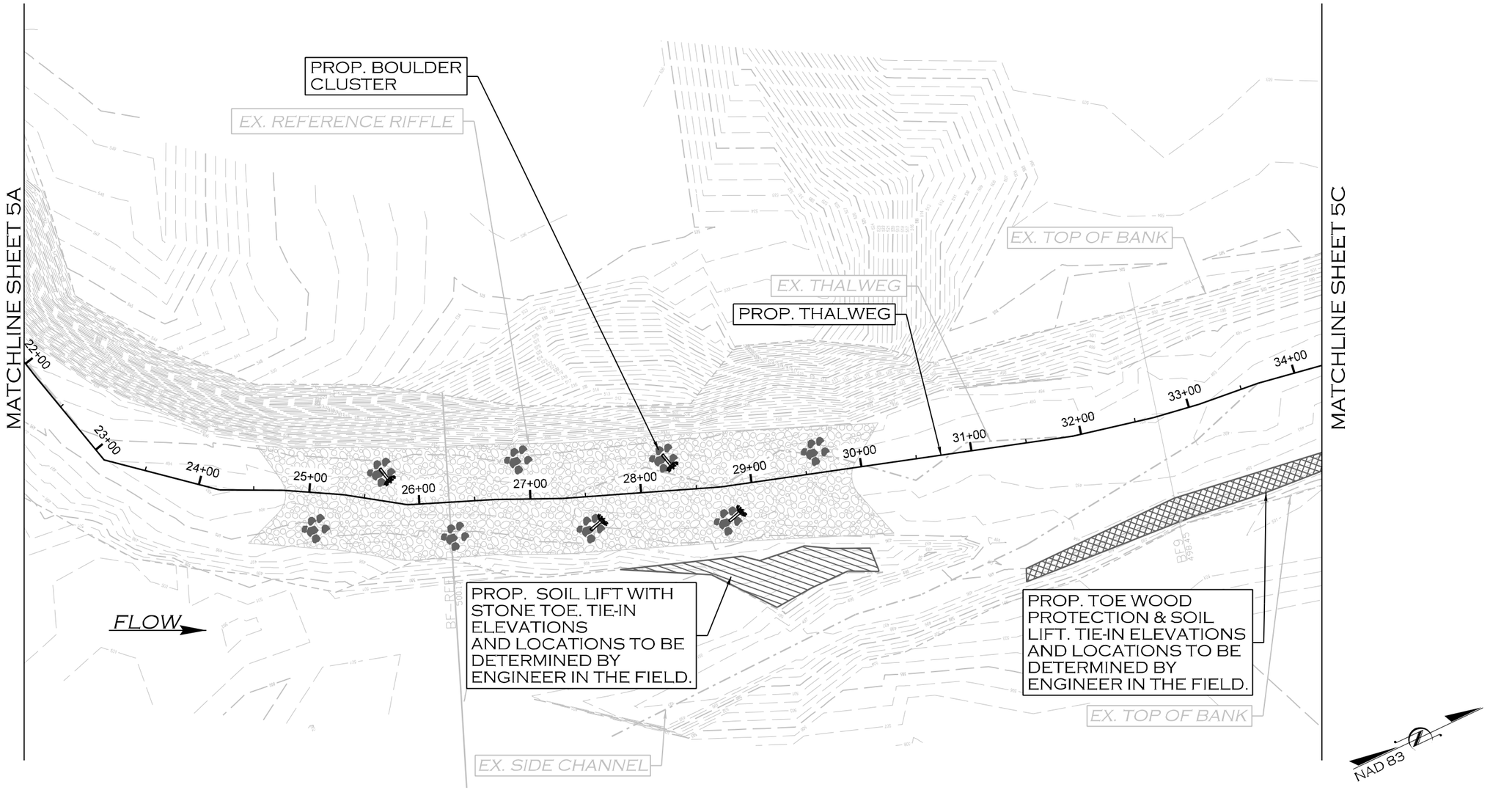
PROJECT ENGINEER

PROGRESS DRAWING
FOR REVIEW PURPOSES ONLY
DO NOT USE FOR CONSTRUCTION

12/23/2024
L:\PROJECTS\EPR0064_SALMON RIVER PHASE 3 STREAM DESIGN\CADD\PLANS\SALMON_PSH_05A-DSN.DGN
DREWHALL

PROJECT # EPR0064 | SHEET NO. 5B

DESIGN PLAN



REVISIONS				
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1	30% DESIGN PLAN	KLT	KLT	12/20/24

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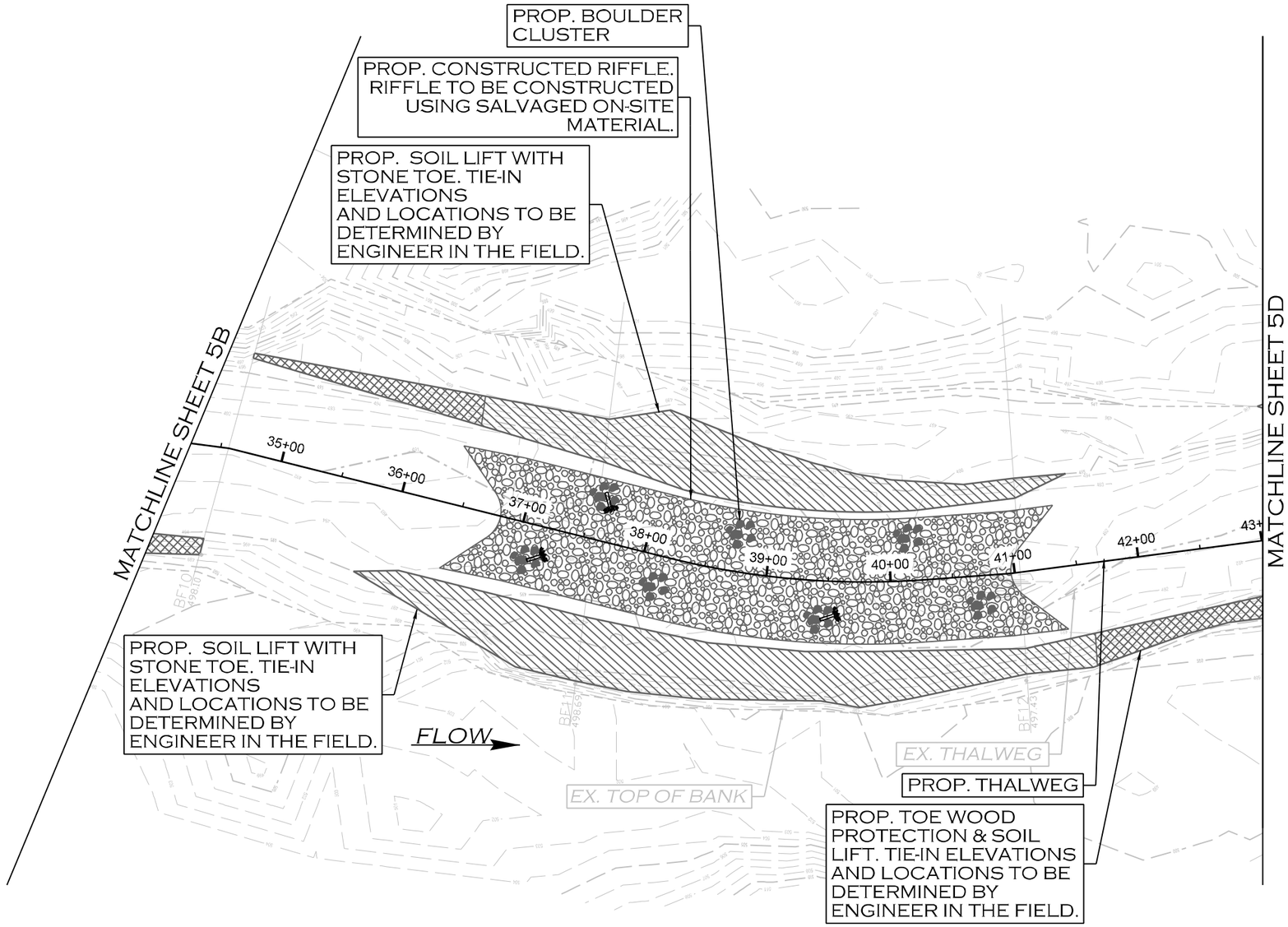
DEWEAT

PROJECT # EPR0064 | SHEET NO. 5C

DESIGN PLAN



REVISIONS				
NO.	DESCRIPTION	ENGR.	APPROV	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

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12/23/2024
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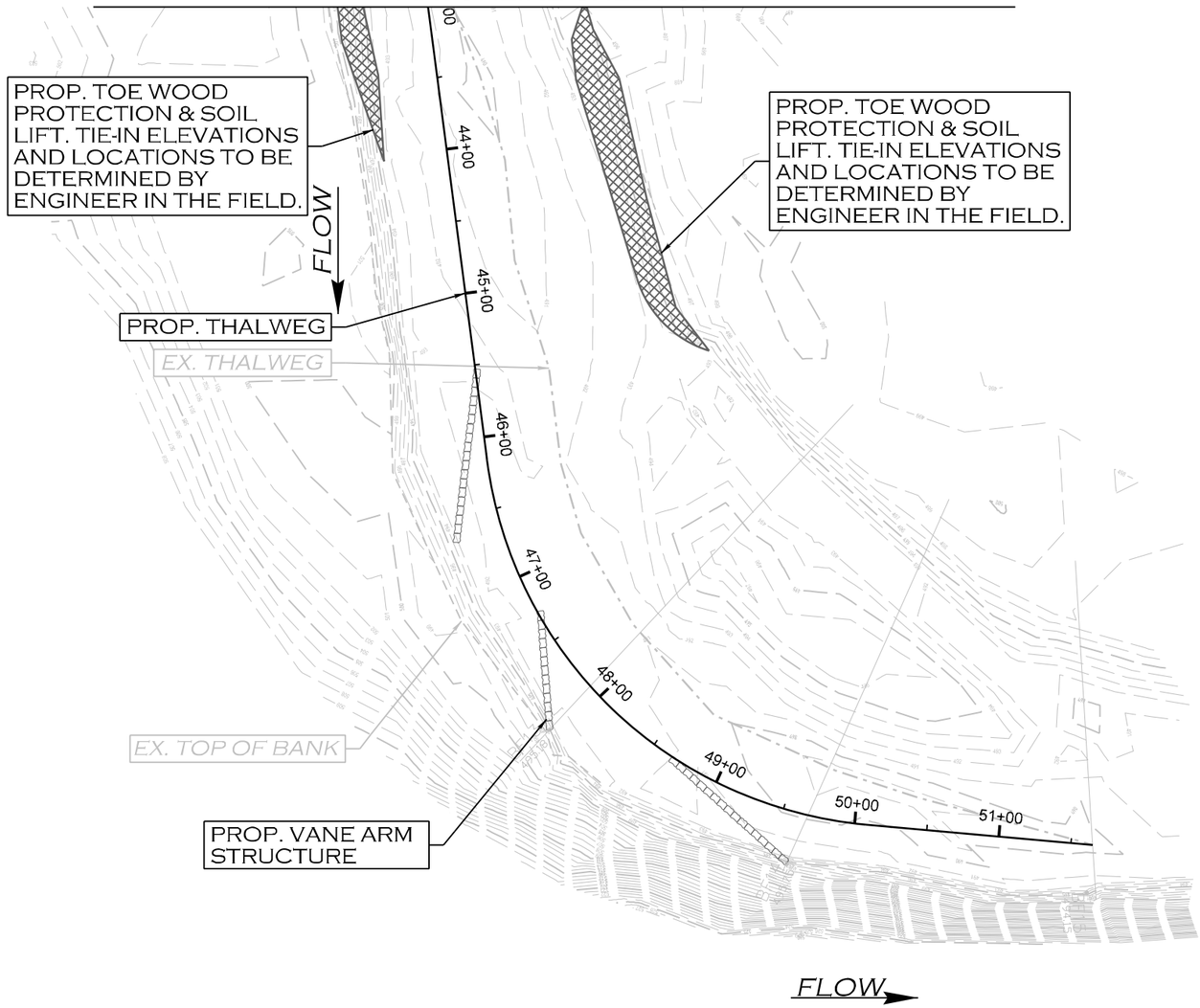
DEWEAT

PROJECT # EPR0064 | SHEET NO. 5D

DESIGN PLAN

MATCHLINE SHEET 5C



NAD 83

50 25 0 50 100
SCALE (FT)

REVISIONS				
NO.	DESCRIPTION	ENGR.	APPROV.	DATE
1	30% DESIGN PLAN	KLT	KLT	12/20/24

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DREWHALL